LEVELSYSTEM
CARAVAN

HYDRAULIC LEVELSYSTEM

CARAVAN
(6 supports)

ENGLISH

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Limited Warranty

Under all circumstances this manual should be read thoroughly, before installing and/or using the product. In no event shall E&P Hydraulics be liable for any direct, indirect, special consequential or incidental damages arising out of the use or inability to use this documentation or product, even if advised of the possibility of such damages.

E&P Hydraulics reserves the right to change parts of the device at any time without preceding or direct announcement to the client.

E&P Hydraulics reserves the right to revise the manual(s), and to make changes in the contents without obligation to notify any person or entity of the revision or change. A registration number appears on the product. Make sure that this official registration number has not been removed. It should be used whenever servicing by E&P Hydraulics or an authorized E&P Hydraulics dealer is necessary.

Important

This equipment has been tested and found to comply with the limits valid for this device, pursuant to EN300220, EN301489, EN60950 rules conform 868MHZ. These limits are designed to provide reasonable protection against harmful interference when this product is operated in a commercial environment. Any unauthorized changes or modifications to this device could void the user's authority to operate this equipment.

For CE-countries:
This device is in conformity with the CE standards. Please note that this device can ONLY be used with the official E&P Hydraulics level system parts to conform to these standards.

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Preface

With the purchase of the E&P Hydraulics levelsystem your caravan will be automatically levelled and/or put stable placed with one push of a button.

Never a caravan:
- that moves when you walk through it, or if it is windy.
- which you suffer from unwanted opening or closing doors.
- where the shower water runs through to the wrong side caused by height differences.
- wherein you have the problem of sleeping in a lean angle.

All issues that are fixed with the E&P Hydraulics levelsystem.

The ergonomic design ensures effortless handling and the sympathetic good looks will automatically enhance your working environment. It is based on proven E&P Hydraulics technology which forms the basis of all our E&P Hydraulics products. After installation one button operates the entire system. Within the E&P Hydraulics strategic vision this products is 100% user friendly and reliable.

This philosophy does not only apply to our customers (end users). Also the technicians installing this device/system at the dealers are very important to us. This product greatly depends on a proper, professional installation. That's the reason why E&P Hydraulics do all they can do to support the people who are responsible for installing our products for you.

This manual is part of our policy. In this manual we explain how to use the general characteristics as easy and efficient as possible.Precisely follow these instructions for the installation, because installing the E&P Hydraulics levelsystem is a precise job. Fully installing the system requires a high level of skill. After all, we are dealing with equipment that must be able to withstand huge forces, something that is often underrated by people with insufficient technical training. If the installation is not performed correctly, serious damages could result in a short time, and even personal injury. Therefore this system may only be installed by professional technicians with sufficient practical experience and a thorough relevant technical training. At all times, the installer will bear sole responsibility for the assembly of the system.

This product is based on hundreds of test hours as well as many successful installations. If you follow this manual step-by-step, you will see what a wonderful, user friendly, quality product this is. However there will always be aspects that can be improved. If you have any suggestions, remarks or questions concerning this product or manual, please do not hesitate to contact us.

On behalf of E&P Hydraulics,

Eric Klinkenberg & Pierre Blom

1. The E&P Hydraulics levelsystem

1.1 Operating of the levelsystem

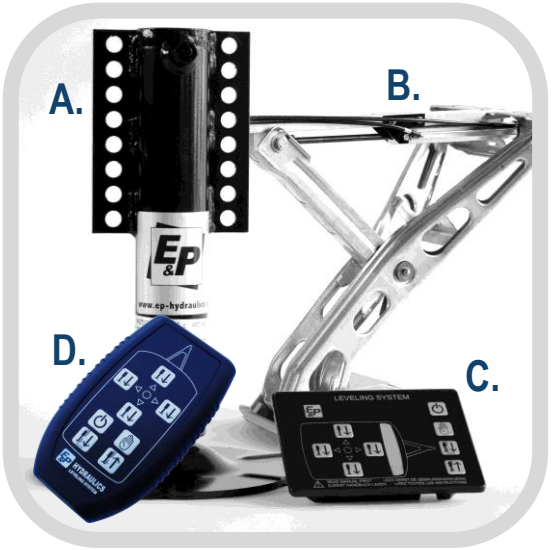
The E&P Hydraulics levelling system is an electrically/hydraulically driven system.

A hydraulic pump is powered by a 12V direct current motor, which will pump hydraulic oil through a system of hydraulic hoses two hydraulic axle-supports and four hydraulic corner-supports, with the aim of stabilizing and levelling the caravan. Mounted to this pump are the oil reservoir, the valve block and solenoid (magnetic) valves.

The E&P Hydraulics levelsystem is electronically controlled by an operating system or so called main-unit, which is mounted at a central location in the caravan.

The levelsystem can be operated either fully automatically or manually by means of a built-in control panel and/or (optional) remote control. Most frequently the control panel is mounted in the sidewall at the entrance of the caravan.

The jacks have the weight bearing and levelling capacity your caravan requires. Each axle-support has a 180 mm. foot plate on a flexible pivot, guaranteeing the greatest firmness possible on any surface.

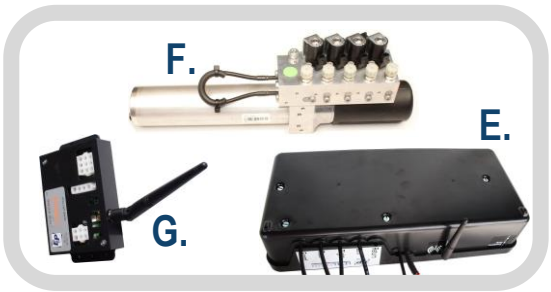


A. Axle-supports (2 pcs)

B. Corner-supports (4 pcs)

C. Control panel

D. Remote control (optional)



E. Protective casing (pump housing)

F. Hydraulic pump

G. Operating system (main-unit)

The E&P Hydraulics levelsystem *(continued)*

1.2 Using the hydraulic levelsystem

The levelling system is designed to be used for creating a stable and horizontal position for the caravan. (the maximum slope on which it is possible to level the caravan is 8%).

With the electronic spirit-level, the caravan is adjusted horizontally over its complete width with the aid of the two axle supports.

Then the caravan is adjusted horizontally in the longitudinal direction with the aid of the four corner supports. The whole caravan will be stabilized via the control panel or the (optional) remote control.

1.3 Specific characteristics of the hydraulic levelsystem

- Automatically extending the jacks from a retracted position.
- Automatically retracting the jacks from a extended position.
- Automatically or manually levelling the jacks.

The E&P Hydraulics levelsystem *(continued)*

1.4 Operating instructions

Before taking into service, the following points must be observed:

- The noseweight **(A)** may not exceed the ***max. 100 KG***.
- Make sure the that the ground is sufficiently even and that there are no holes and/other obstuctions present.
- Place the caravan on a firm footing, otherwise the axle supports may sink into the ground.
- It is important that when you use the system the caravan is standing facing slightly downhill **(B)**.
- Never use the system when there is anything attached to the caravan, such as an awning or a canopy.
- Never use the levelsystem in automatic mode when the caravan is attached to the vehicle.

The following safety precautions must be observed when positioning the caravan:

- The caravan must be unhitched from its towing vehicle.
- Apply the caravan hand-brake securely.
- Make sure that when the system is being operated, no-one is present in the vicinity of the caravan.
- Note that there are no loose objects under the caravan.
- Make sure that when levelling is being carried out, no-one is in the caravan.
- An acoustic signal will be sounded during the levelling process.
- The levelling program cab be stopped at any time by pressing the “ON / OFF” button on the control panel or (optional) remote control.

Before driving off, check to make sure that all supports have been withdrawn.

2. Safety warnings

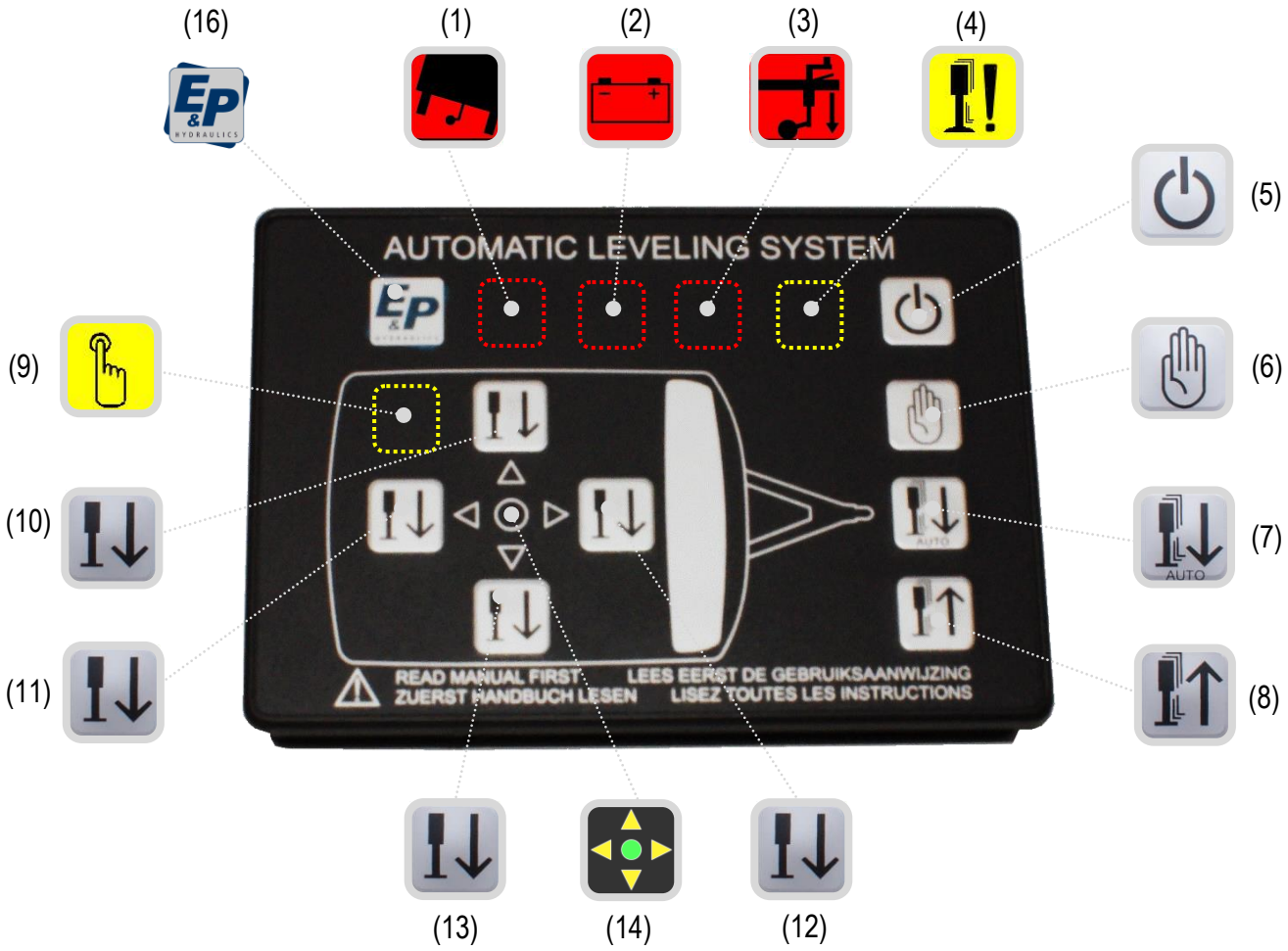
Fail we to observe the following warnings may lead to damage to the caravan and/or serious physical injuries.

- Using the E&P Hydraulics levelling system for other purposes than supporting the caravan is officially forbidden according to E&P Hydraulics limited warranty.
- This product is exclusively developed as a levelling system and is not designed to be used for other work underneath the caravan. If the system is utilised to help with changing a wheel, it is the responsibility of the user to ensure the caravan is secured safely in position. Never lie underneath a jacked-up vehicle, as this is dangerous and could result in serious injury! Please always refer to your caravan manufacturer's recommended jacking procedures.
- When the system is operating, all persons and animals should keep their distance.
- Body parts (e.g. hands and eyes) should never come into contact with released fluids. Oil leaving the hydraulic levelling system may be under high pressure and could cause serious injuries to the skin. Consult a doctor immediately in case of accident.
- The caravan should be parked on a solid, non-slippery surface. The parking location must be free of holes and free of waste and surrounding objects.
- If the caravan is parked on very soft soil, you must place a support plate under each jack in order to distribute the weight.
- Check that the installation of the hydraulic levelsystem is performed by a skilled mechanic with sufficient practical experience and technical E&P Hydraulics training.
- In case of repairs/malfunctions to the hydraulic levelsystem: know what you are doing. Never try to repair it yourself, but consult your installer or dealer.
- Fully read this user manual before using the hydraulic levelsystem.
- After deploying the hydraulic levelsystem ALWAYS make an inspection tour around the caravan, just to be sure the caravan stands stable (all hydraulic jacks are on the ground).

3. Control functions

3.1 Functions on the control panel

The diagram below shows the appearance of the control panel. By using the control panel (or remote control, see chapter 3.2) you can operate the hydraulic levelsystem. See also chapter 3.3 for the extended function declaration concerning buttons and indicator LED's.



Function declaration:

(1) LED: Slope too steep
(2) LED: Battery low voltage
(3) LED: Withdraw front wheel
(4) LED: Jacks not (fully) retracted
(5) Button: ON / OFF
(6) Button: Manual mode
(7) Button: Automatic mode
(8) Button: Retract all Jacks
(9) LED: Manual mode
(10) Button: Jack left
(11) Button: Jacks rear
(12) Button: Jacks front
(13) Button: Jack right
(14) LED: Level indicator
(16) LED: E&P logo

3.2 Functions on the remote control

The diagram below shows the appearance of the remote control. By using the remote control you can operate the hydraulic levelsystem. See also chapter 3.3 for the extended function declaration concerning buttons and indicator LED's.

Function declaration:

(1) LED: Slope too steep
(2) LED: Battery low voltage
(3) LED: Withdraw front wheel
(4) LED: Jacks not (fully) retracted
(5) Button: ON / OFF
(6) Button: Manual mode
(7) Button: Automatic mode
(8) Button: Retract all Jacks
(9) LED: Manual mode
(10) Button: Jack left
(11) Button: Jacks rear
(12) Button: Jacks front
(13) Button: Jack right
(14) LED: Level indicator
(15) LED: Remote control battery low

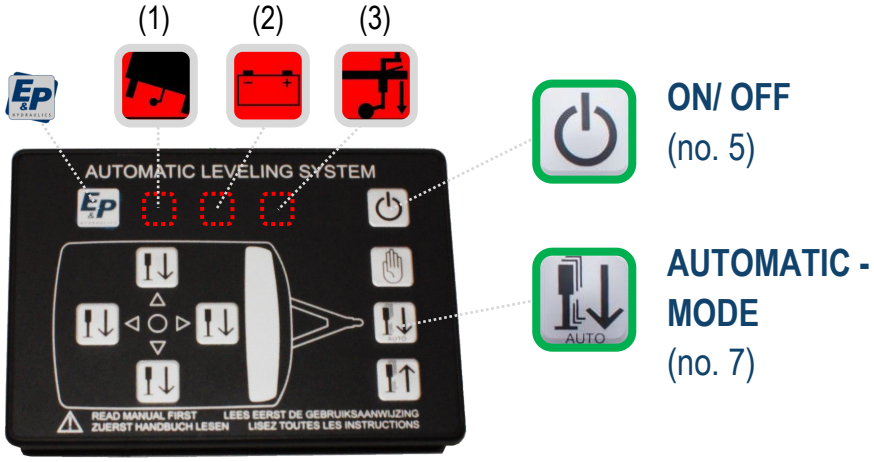
3.3 Extensive function declaration

			LED's
(1)		**SLOPE TOO STEEP**	In this position the caravan cannot be levelled. (the surface is not even enough) If necessary switch over to manual mode.
(2)		**BATTERY LOW VOLTAGE**	The battery is empty or the voltage is too low to be able to work safely.
(3)		**WITHDRAW FRONT WHEEL**	The caravan is too high at the front, withdrawn the front-wheel and the LED will go out.
(4)		**JACKS NOT (fully) RETRACTED**	One or more jacks are extended or not fully retracted.
(9)		**MANUAL MODE**	Indicates that the caravan can now be brought to the correct level manually.
(14)		**LEVEL** (zero point)	Indicates that the caravan can now be brought to the correct level.
(15)		**BATTERY 9V VOLTAGE**	The battery voltage of the remote control is too low. *(only present on the remote control)*
(16)		**E&P LOGO**	Indicates that the levelsystem is switched on. (*only present on the control panel)*
			BUTTONS
(5)		**ON / OFF**	Switches the levelsystem on or off.
(6)		**MANUAL MODE**	Switches the levelsystem into manual mode for levelling the caravan.
(7)		**AUTOMATIC MODE**	Switches the levelsystem into automatic mode for levelling the caravan.
(8)		**RETRACT ALL JACKS**	Automatically retracts all jacks.
(10)		**JACK LEFT**	Controls retracting and extending the left jack.
(11)		**JACKS REAR**	Controls retracting and extending the rear jacks.
(12)		**JACKS FRONT**	Controls retracting and extending the front jacks.
(13)		**JACK RIGHT**	Controls retracting and extending the right jack.

4. Operating the levelsystem

4.1 Automatic levelling

The procedure for automatic deployment/extension of the axle and corner supports is as follows.



Step 1 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem ON.

The "E&P-logo" LED lights up, indicating that the levelsystem is switched on.

When there is insufficient or no battery voltage, the indicator LED ''LOW VOLTAGE'' (no.2) lights up.

In automatic levelling, the caravan must be tilted a few degrees forwards. The system will indicate whether you have positioned the caravan level enough. If you have not, the indicator LED "FRONT WHEEL" (no.3) lights up, and the system cannot be started automatically. The front wheel must be wound down.

When the caravan leans too steeply, the indicator LED ''SLOPE TOO STEEP'' (no.1) lights up.

REMARK: When the caravan leans too steeply, the caravan cannot be auto - matically levelled. You now have two options: Stop the levelling procedure and place the caravan on a flatter surface and start again with automatic levelling procedure. Or go further with manual levelling procedure.

Step 2 Press **1x** on the button **"AUTOMATIC MODE"** (no.7) to start the automatic levelling procedure.

When the levelling procedure is **complete,** the indicator LED "LEVEL" (no.14) lights up GREEN.

REMARK: Depending on the angle of the terrain and type of caravan, the automatic levelling procedure takes about 1 minute.

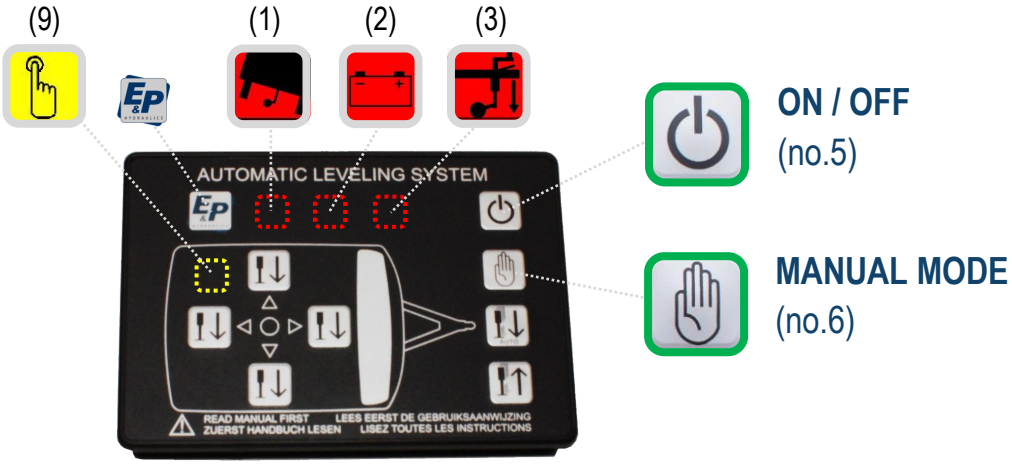
Step 3 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem OFF.

4.2 Manual levelling

The procedure for manual deployment/extension of the axle and corner supports is as follows:

The manual levelling function is mainly used when automatic levelling is not possible due to a large tilt of the caravan. With the help of this feature it is also possible to change the position of the caravan; think of your sleeping comfort. Most people prefer to sleep with their head up slightly. Depending on the orientation of the caravan with this feature you can manually adjust the angle where necessary.

REMARK: On the side where the caravan is low, fill the space under the axle support (footplate) with some boards to compensate the difference in height. This will avoid the risk it is not possible to level the caravan due to a too large difference in height. In case of too large height difference the hydraulic jacks may come to the end of their stroke.



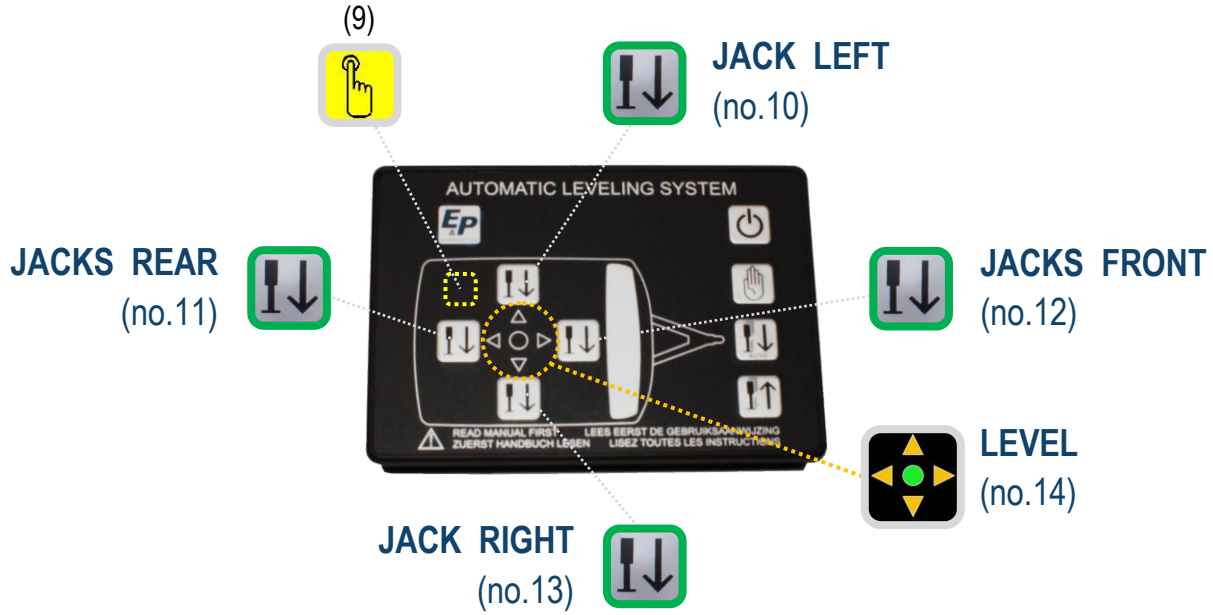
Step 1 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem ON.

- The "E&P-logo" LED lights up, indicating that the levelsystem is switched on.
- When there is insufficient or no battery voltage, the indicator LED ''LOW VOLTAGE'' (no.2) lights up.
- In manual levelling, the caravan must be tilted a few degrees forwards. The system will indicate whether you have positioned the caravan level enough. If you have not, the indicator LED "FRONT WHEEL" (no.3) lights up.

Step 2 Press **1x** on the button **"MANUAL MODE"** (no.6).

- The indicator LED ''MANUAL MODE'' (no.9) lights up, indicating the manual levelling procedure may begin.
- When the caravan leans too steeply, the indicator LED ''SLOPE TOO STEEP'' (no.1) lights up, although this LED lights up, **you are able to level.**

4.2 Manual levelling *(continued)*



Step 3 In most common cases, one ORANGE arrow on the control panel (no.14) lights up indicating the caravan has to be lifted on the left side or the right side.

BEFORE lifting this side: FIRST lower the other axle-support by holding button **"JACK LEFT"** (no.10) or **"JACK RIGHT"** (no.13) until it touches the ground.

Then the axle-support as indicated on the control panel (no.14) can be extended by holding button **"JACK LEFT"** (no.10) or **"JACK RIGHT"** (no.13). The levelling procedure automatically stops when the caravan is levelled in the left to right direction. The ORANGE arrow level LED (no.14) goes out.

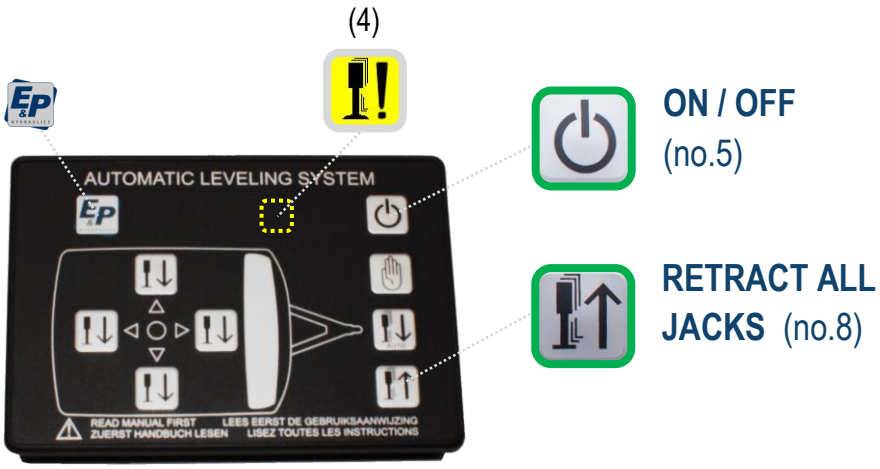
Step 4 Hold the button **"JACKS FRONT"** (no.12), until the ORANGE arrow level LED (no.14) goes out. Extention of the front corner supports will automatically stop when the caravan is levelled in the front to rear direction.

Step 5 Press the button **"JACKS REAR"** (no.11) **until** the corner supports at the rear side are touching the ground. **Attention! The level system does NOT stop automatically**.

Step 6 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem OFF.

4.3 Retracting the jacks

Follow the procedure below to retract the axle and corner supports.



Step 1 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem ON.

The "E&P-logo" LED lights up, indicating that the levelsystem is switched on.

Step 2 Press **1x** on the button **"RETRACT ALL JACKS"** (no.8).

The indicator LED ''JACKS NOT FULLY RETRACTED'' (no. 4) goes out when all jacks have been fully retracted.

Step 3 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem OFF.

IMPORTANT: Before departure ensure all supports have been retracted.

5. Extra functions

5.1 Calibration *(setting the zero point)*

The calibration procedure described below has already been carried out at your dealer/installer.

You don't have to perform this procedure by yourself. E&P Hydraulics has decided to include this chapter as an extra in this manual in case of failure and/or service & repair matters.

Consider setting the zero point** as a condition to make it possible to level the caravan automatically- and/or manually. When this operation, for some reason, has not been done or has been carried out incorrectly, it is not possible to level the caravan.

** The zero point is the point (level) to which the hydraulic leveling system (in an automatic cycle) returns.

Start: Manual levelling

Before automatic levelling can be activated, you must set the zero point. For setting the zero point, you must **first** perform the **manual levelling** procedure.

REMARK: *Do this by placing a spirit level in the center of the caravan.*

ATTENTION ! *Never put the rear brackets first to the ground. This in case creating too much load on the caravan.*

Setting the zero point

Step 1 Press **1x** on the button **"ON / OFF"** (no.5) to switch OFF the levelsystem after manual levelling.

Step 2 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem ON.

Step 3 Press **5x** on the button **"JACKS FRONT"** (no.12)

Step 4 Press **5x** on the button **"JACKS REAR"** (no.11)
All LED's on the control panel light up. (the vehicle stands in zero mode)

Step 5 Press **3x** on the button **"RETRACT ALL JACKS"** (no.8)
The zero point is programmed.

Step 6 Press **1x** on the button **"ON / OFF"** (no.5) to switch the levelsystem OFF.

5.2 Remote control programming

5.2.1 Introduction

The procedure described below has already been carried out at your dealer/installer. You don't have to perform this procedure by yourself. E&P Hydraulics has decided to include this chapter as an extra in this manual, in case of failure and/or service & repair matters.

When this operation, for some reason, has not been done or has been carried out incorrectly, it is not possible to level the caravan with the remote control.

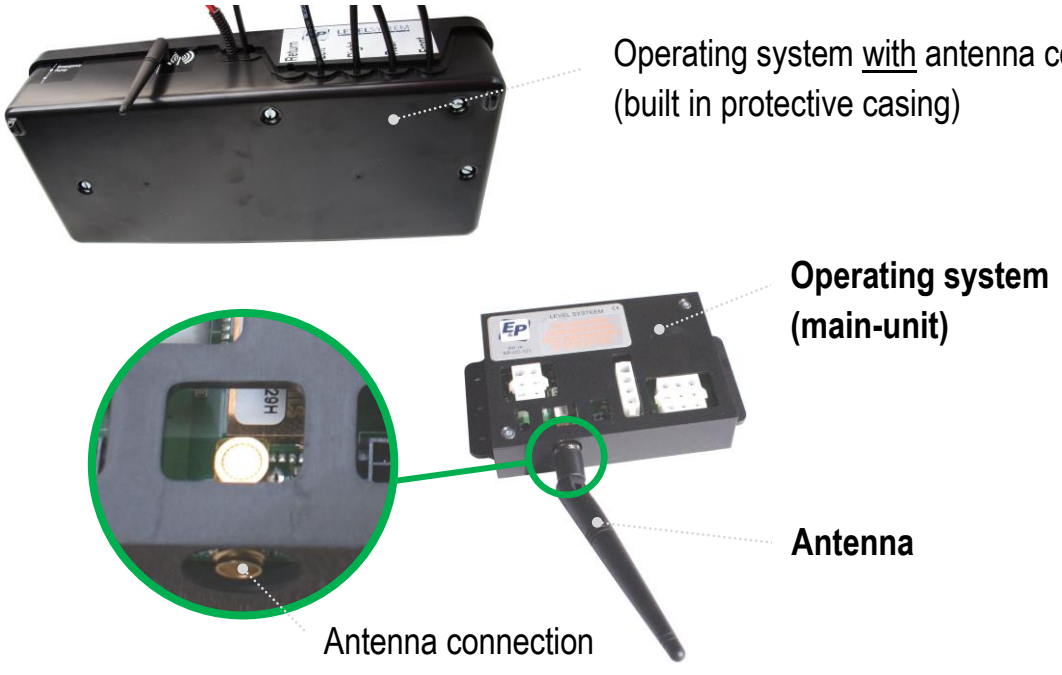
5.2.2. Antenna

Check if there is an antenna connection on the operating system (see picture below). If this is not the case, the remote control CANNOT communicate with the hydraulic levelling system. In principle, the antenna connector and the antenna are always present when you purchase the levelsystem including a remote control unit.

If you purchased the remote control at a later stage (i.e. not with the levelsystem), then you should remember that this antenna connection on the operating system (main-unit) could be missing.

The presence of the antenna is dependent on the age of the levelsystem. After January 2013, all operating systems have this antenna connector. In this case, the dealer/installer can directly connect the antenna to the operating system (the antenna is supplied with the remote control)

Below is the picture of the operating system including the antenna connection.



Remote control *(continued)*

5.2.3. Battery

Remove the battery-cover on the rear side of the remote control by firmly pressing the cover and then sliding out. Insert the 9V battery and carefully reassemble the battery-cover (in most cases the battery is already fitted)

5.2.4 Programming the remote control *(calibrate/pair)*

Step 1 In order to pair the remote control to the system, remove the fuse (30Amp.) in the cable assembly of the hydraulic levelsystem.

Step 2 Press the buttons **"AUTOMATIC MODE"** (no.7) and **"RETRACT ALL JACKS"** (no.8) **simultaneously**.

When done, the Indicator LED (no.14) with the surrounding 4 arrows starts blinking GREEN/ORANGE rapidly. This means the remote control is looking for its receiver, mounted within the operating system.

Step 3 Reconnect the fuse to the system.

- The pairing process should be made within a certain time (apr. 20 sec.)
- The remote control turns off automatically.
- When the Indicator LED (no.14) goes off, the pairing process is complete.

Remote control *(continued)*

5.2.5 Putting the remote control into use

After programming the remote control you now have the possibility to operate the levelsystem with it.

Step 1 Switch the remote control ON by pressing button **"ON / OFF"** (no.5) for at least 1 second.

Now the GREEN LED will light up by flashing. As long as you see this LED flashing, the remote control is searching for contact with the operating system. When contact is made the flashing stops.

The illumination of one, or two, ORANGE arrows on the indicator LED (no.14) central on the control panel shows the position of the caravan.

In the unlikely event that the caravan is already level, then the indicator LED (no.14) lights up GREEN.

Further operation goes as described in the chapters 4.1 up to 4.3

5.2.6 Which device takes command

The device which is switched on first (remote control or control panel) takes the command to control the system, until that device is switched off. If you would like to switch from one control device to another, you need to switch off the power from the device that was in operation first.

REMARK 1: In the event of switching over from the remote control to the control panel: you have to wait a little time, to give the system enough time to switch off contact between the remote control and the operating system.

REMARK 2: It may be that the operating system is built in such a way that receiving a signal between the remote control and the operating system works poorly or even not at all (caused by caravan construction materials e.g. steel, wood, plastics, etc.).
In this case there is a possibility to move the antenna away from the operating system by means of an optional extension cable (length max. 2 meters, available from E&P Hydraulics).

5.2.7 Battery Indicator

When the battery level indicator LED (no.15) lights RED, the device does not stop working immediately. After this signal it is possible to use the remote control apr. another 4 times.
Make sure there is a spare battery in the caravan.

5.3 Emergency pump *(optional)*

5.3.1 Introduction

The optional Emergency hand pump allows the levelsystem to be operated manually, in the (emergency) event the system is defective, or (more likely) because there is not enough battery voltage present.

This possibility is offered by E&P Hydraulic for situations where, for whatever reason, the levelsystem does not withdraw its support jacks and is therefore preventing you from driving, or moving, the caravan.

We call it an "emergency situation" because in practice the time for withdrawing the hydraulic jacks is, most often, also the time of a (planned) departure. By not automatically withdrawing the support jacks you can no longer move, with adverse consequences.

Therefore, E&P Hydraulics offers you the possibility to integrate an emergency hand pump, for the levelsystem. As the name implies, it is a pump operated by hand that controls (the withdrawal of) all jacks. This means that the time of your departure, transport or movement can be guaranteed.

The emergency hand pump is mounted under the caravan in such a way that it is accessible from the side.

Protective pump housing with the connections to the emergency pump.

Emergency hand-pump.

Emergency pump *(continued)*

5.3.2 Putting the Emergency pump into use

When actually using the emergency hand pump operation, proceed as follows:

Step 1 Using the Allen key, turn the gold hexagon bolt on the emergency hand pump clockwise to the right (open position).

Step 2 Place the metal tube (handle) into the black holder on the emergency hand pump assembly.

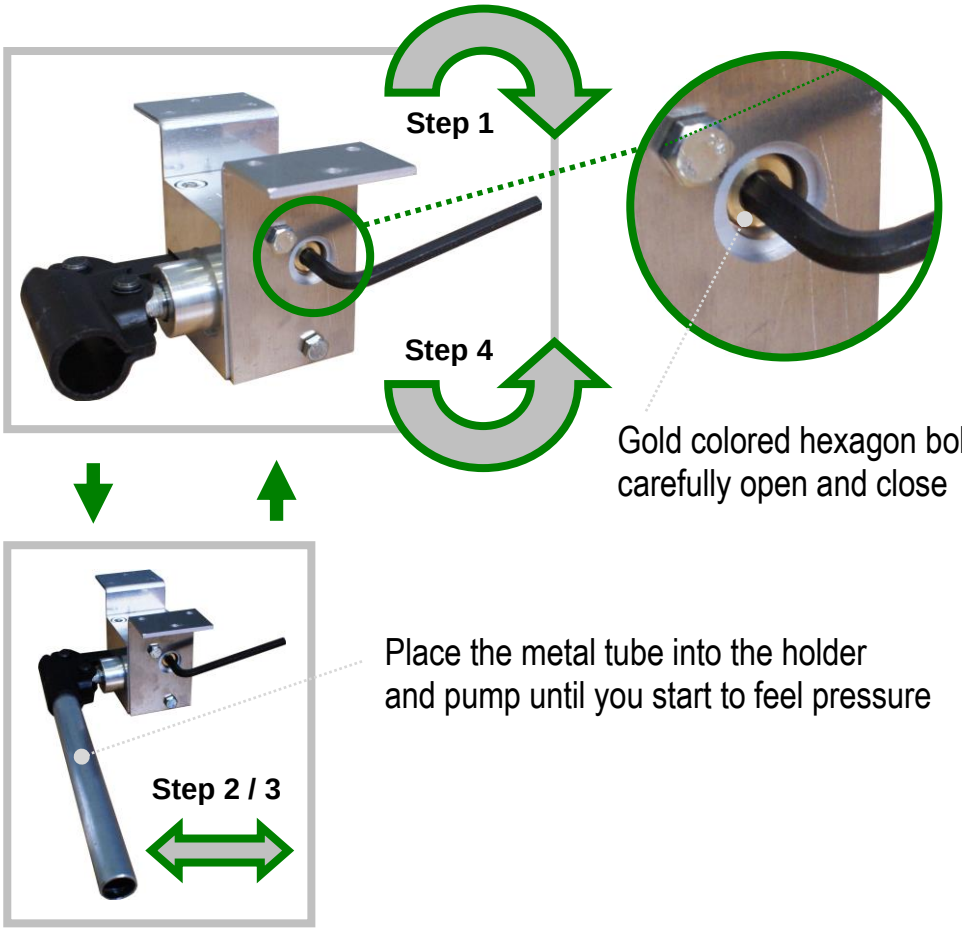
Pump (back and forth) with the metal tube until all hydraulic jacks are withdrawn. (all jacks will be withdrawn at the same time)

The moment you feel pressure (resistance) building up during this movement is the sign the jacks are fully withdrawn.

Step 3 Remove the metal tube from the holder.

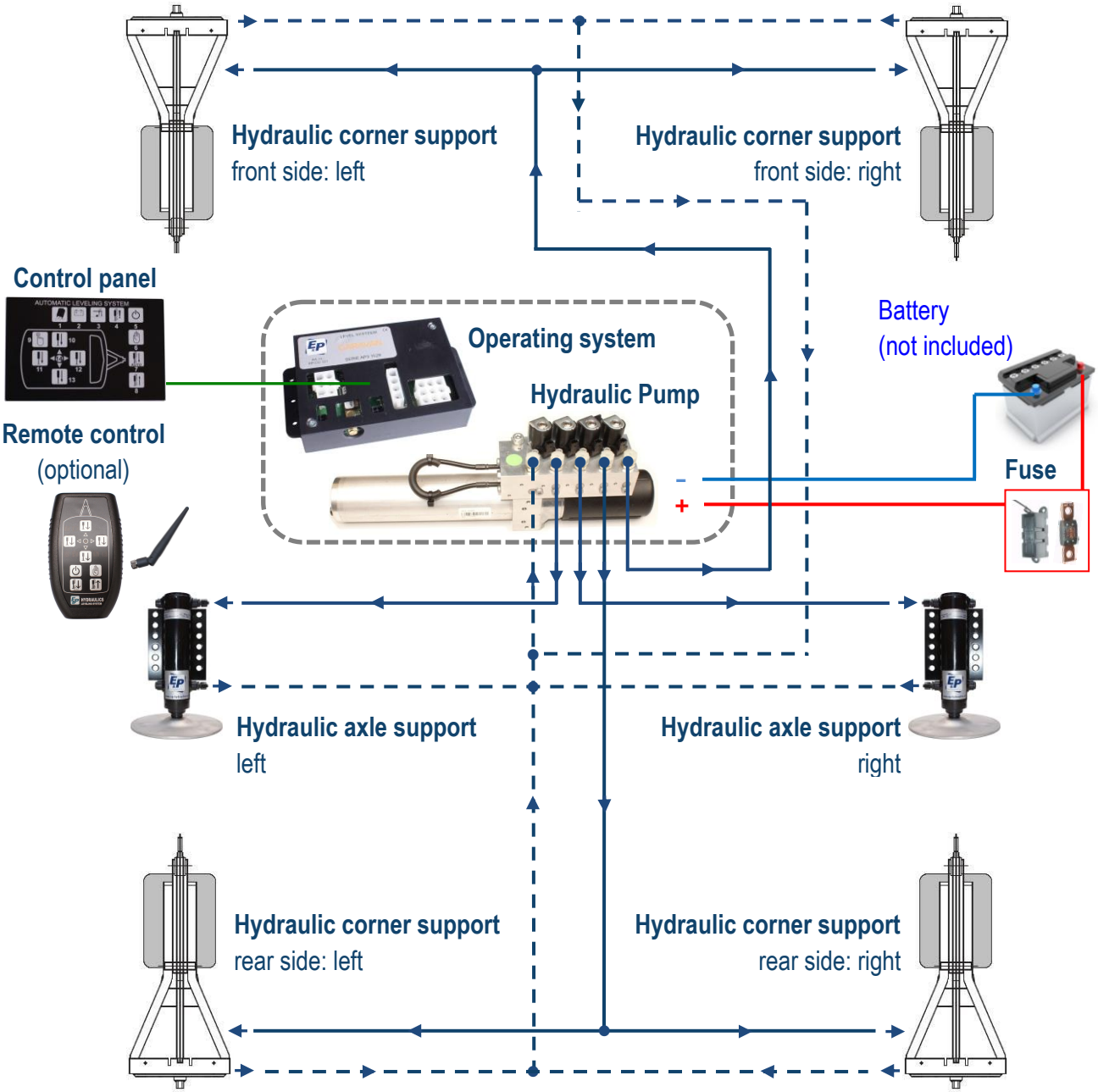
Step 4 Using the Allen key, turn the gold hexagon bolt on the emergency hand pump assembly carefully, anticlockwise, to the left until it locks (closed position).

. **Attention ! carefully turn to the locked (closed) position**


Step 1
Step 4
Gold colored hexagon bolt
carefully open and close
Step 2 / 3
Place the metal tube into the holder
and pump until you start to feel pressure

6. Schematic diagram of the hydraulic levelsystem

Below the schematic view/diagram of the E&P Hydraulics levelsystem.



7. Remarks and recommendations

Below is an overview concerning remarks and recommendations (tips) for the hydraulic levelsystem:

- After 4 minutes of no operation, the system will switch off automatically.
- The automatic levelling cycle can only be started after all jacks have been retracted. If the jacks are not retracted when the automatic cycle starts, the system will do this automatically. So it is not possible to make short adjustments to the jacks; the system will always first completely retract its jacks.
- At a low battery voltage, the system will automatically switch off.
- Jacks are extended and you accidentally drive off: the system will immediately give an alarm and the jacks are automatically retracted as soon as the hand brake is disengaged. In case of vehicles with a pneumatic brake installation, this takes place when the engine is started.
- All normal functions of the system are switched off, in error mode.
- The jacks always operate 2 at a time at 1 side. The left side, right side, front side and rear side. Only when retracting do all 4 operate at the same time.
- During winter conditions (e.g. in snow and ice) put something (e.g. a piece of carpet) under the jacks to avoid sliding.
- Manual operation is mainly recommended for uneven surfaces.
- In manual operation, all four jacks should always be extended before levelling starts.
- The system cannot handle all angles, the limit values differ per caravan.
- If the system makes a slope angle that is too big and no longer responds to requests for automatic levelling, we recommend bringing the vehicle as close as possible to the zero point in manual mode.

8. Troubleshooting

In case of an error message, check or the caravan stands not too high at the front (front wheel must be withdrawn), whether the battery has sufficient voltage, whether the oil level is correct, whether there is any damage to the jacks, and check all the cables.

If this does not lead to a solution for the fault, the fault could be located in the drive units. As the drive unit does not have any repairable parts, you should contact your E&P Hydraulics dealer/installer.

Under normal circumstances, all LED's are off and the unit will only respond by pressing the button "ON / OFF" (no.5) switching the levelsystem on.

Problem	Possible causes	Solution(s)
● The system fails to start ** ● The red battery lamp lights up. ● When the red battery lamp Lights continuously, the Installation is switched off for 4 minutes.	Battery voltage low.	● Recharge the battery, Charger is defective or there is no voltage being supplied.
● The support jacks do not extend towards the ground when the pump is running.	Oil level to low or no oil in the system. The pump is not working correctly. There is no or bad electronic connection.	● Check for any oil-leaks. Repair or exchange. Check cables for loss of voltage.
● The system does not work automatically, lamp front wheel lights up.	Caravan stands too high on the front side.	● Withdrawn the front wheel.

** ***NOTHING*** *works, even no LED signal.*

Possible cause: the ***battery*** *is* ***fully out of order*** *(<5V)*

IMPORTANT: For all other reports and/or mal-functioning of the system, please contact your dealer/installer.

9. Maintenance

The E&P Hydraulics levelsystem does not have parts that need to be maintained periodically. When parts have been taken apart, the warranty will become invalid. If necessary parts could be substituded, repaired and/or exchanged (warranty). Please contact your E&P Hydraulics dealer/installer if necessary.

WARNING: In control/service-works secure the caravan by placing suitable stands under the caravan. By not doing this you create a real danger of personal injury or serious accident.

Preventative controls

- Periodically checking the hydraulic oil level. (ONLY by dealer/installer)
    - The hydraulic oil (type: *Pentosin CHF 11S*) preventative replace after apr. 36 months.
- Periodically check the electronic cables and connections.
- Periodically check the hydraulic jacks.
    - Remove dirt, sand, mud and other contamination that settles during use, it may obstruct the operation of the hydraulic leveling system.
    - If the jacks remain extended for a longer period of time, the exposed legs should be protected by spraying them with a silicon lubricant, to help prevent corrosion. If the caravan is located in a salty environment, this should be done regularly.
- In winter (slippery) conditions we advise you to take additional safety and precautionary measures. Especially because your safety during operation of the system. For optimal performance under extreme conditions (- 30 degrees) we recommend the use of a special hydraulic oil for low temperatures (consult an authorized dealer).

  Furthermore, during the winter period we have to deal with situations in which de-icing salt will tack to the outside of the system. Preventative maintenance should be:

    - Good cleaning of the jacks.
    - Clean the stainless steel cylinder (piston rod) and spray with a silicone lubricant.
    - Remove dirt from the stainless steel foot plate (especially at the bottom, this is the area your caravan stands on)
    - Try to put the caravan in a location as clean and flat as possible.
    - Place a piece of rubber (e.g. piece of carpet) between the frozen (slippery) surface and the the footplate.
    - Before leaving make an additional check round the caravan, if necessary remove snow and ice from the jacks, then you are free to withdraw the jacks.

10. Warranty

Repairs to the caravan must be performed by dealers recognized by E&P Hydraulics. For systems which are not (or cannot be) changed, installed or repaired by a recognized E&P Hydraulics dealer, the warranty cannot be used.

E&P Hydraulics gives guarantees for parts of its hydraulic levelsystem against faults in material and manufacturing for a period of 24 months starting from the date of purchase. If an E&P Hydraulics product was checked by an official E&P Hydraulics dealer and a fault in material or manufacturing was discovered within the aforementioned period, E&P Hydraulics is able to choose the following actions:

- Repairing or replacing the faulty part for free in E&P Hydraulics factory or another location determined by E&P Hydraulics.
- Sending a mechanic to the location where the caravan is at that moment, in order to repair or replace the product/part on site.
- Writing out a credit note for the defective product/part.

All warranty claims require a product test and approval by (a dealer of) E&P Hydraulics. All repairs must be approved by E&P Hydraulics before the work starts. There can be no exceptions to this procedure. Immediately contact E&P Hydraulics directly before trying to perform a repair or change to your E&P Hydraulics product. Claims for alleged damages to products are only allowed if E&P Hydraulics has had the opportunity to check the claim.

The warranty becomes invalid when:

If the buyer modifies the system, or if the buyer makes settings independently. In case of abuse or negligence, overloading, damage through accident, incorrect loading or incorrect weight distribution, damage through improper use or improper maintenance, connection to wrong parts or repair attempts by other persons than the acknowledged E&P Hydraulics dealer/installer.

This warranty does not apply to physical damage, damage as a result of force majeure, in case of commercial use or adaptation of the product or for products that are sold as a special offer and/or ‘with defects’.

This warranty will become invalid if the product’s identification criteria, which were attached in the factory, are changed or removed.

11. Notes

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E&P Hydraulics DEALER

LEVELSYSTEM

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